April 27, 1926. 1,582,145

M. H. SHOENBERG ET AL

LIGHTER

Filed July 17, 1924

Fig. 1.

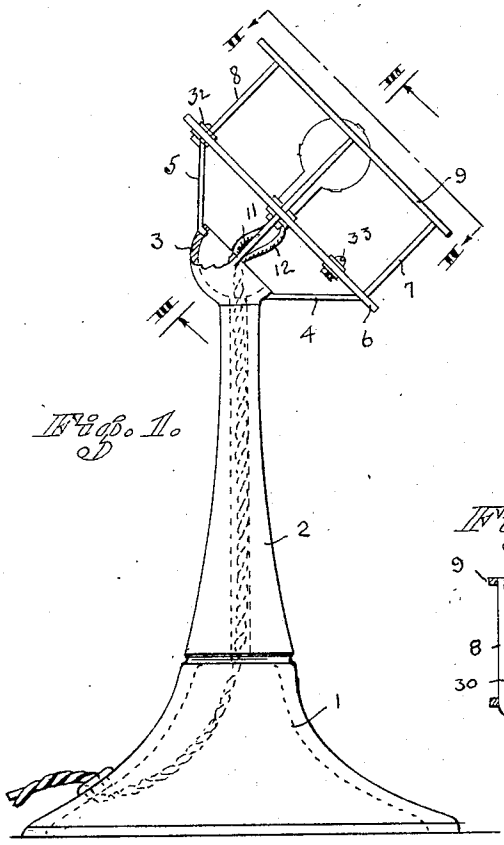


Fig. 2.

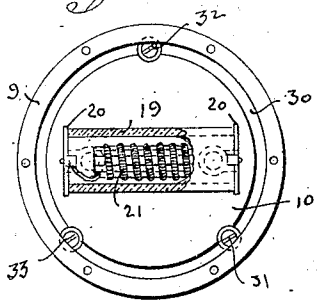


Fig. 3.

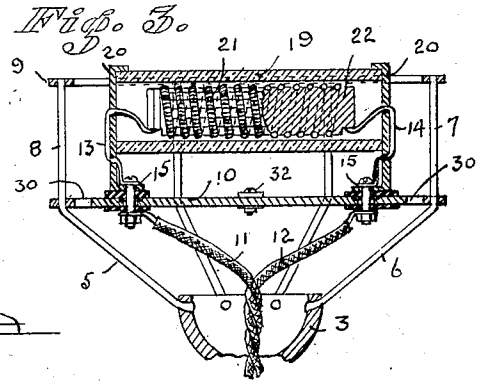


Fig. 4.

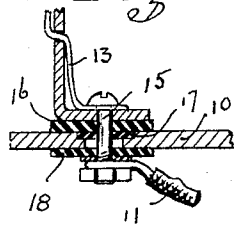
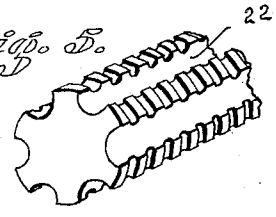


Fig. 5.



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UNITED STATES PATENT OFFICE.

MILTON H. SHOENBERG AND LESTER SCHON, OF SAN FRANCISCO, CALIFORNIA; SAID SCHON ASSIGNOR TO SAID SHOENBERG.

LIGHTER.

Application filed July 17, 1924. Serial No. 726,477.

To all whom it may concern:

Be it known that we, MILTON H. SHOENBERG and LESTER SCHON, both citizens of the United States, residing in the city and county of San Francisco, State of California, have invented new and useful Improvements in Lighters, of which the following is a specification.

Our invention has for its object a portable device to be attached to energizing electrical connections and adapted to set on a counter or the like, for the purpose of lighting cigars, cigarettes or pipes.

These objects we accomplish by mounting an electrical resistance adapted to primarily generate heat within a quartz or silica tube or like material having an extremely low coefficient expansion and conductivity and extending the tube at each end beyond the said resistance thereby providing relatively cool ends and supports. The said tube is spaced from the backing member which latter is of a black or very dark surface, with special reference to avoiding the reflection of heat and the said backing member is spaced from the main standard and base to avoid heat transmission and is adapted to support the lighting unit in proper position. The tube when heated provides ignition.

By referring to the accompanying drawing our invention will be made clear.

Fig. 1 is the side view of a device employing our invention.

Fig. 2 is a front view of the upper portion of Fig. 1.

Fig. 3 is an enlarged cross section on the line III—III of Fig. 1.

Fig. 4 is a detail of the insulating means through the backing member and showing in detail the supporting portions of the frame.

Fig. 5 is a fragmentary detail in perspective of the refractory core on which the resistance is wound.

Throughout the figures similar numerals refer to identical parts.

The main base and standard are indicated by the numerals 1, 2, respectively, the latter having a cup portion 3 at its upper end from which extend the cage supports 4, 5, which latter pass through the ring 6 and extend as spacing members 7, 8, supporting the outer ring or cage member 9.

At 10 is a backing plate whose surface is preferably painted black or otherwise prepared to absorb and not reflect heat, and through this plate the energizing connections 11, 12, are connected with the resistance coil terminals 13, 14, respectively by means of connections best shown in Fig. 4, wherein a connecting screw 15 is insulated from the member 10 by the insulating washers 16, 17, 18.

At 19 is shown a quartz tube held in position having end plates 20, 20, fixed to the member 10 by the screws 15, 15. The resistance coil terminals 13, 14, respectively are of greater carrying capacity so that they will not become hot due to their own resistance, and within the quartz tube they are bridged by the high resistance wire indicated at 21 which is wound as an elongated coil, which coil is then wrapped within the peripheral grooves upon the core member 22 as a helical spring.

In this way the heat is generated principally at the inner central portion of the tube 19, the end plates 20, 20, remain relatively cool.

The refractory core on which the resistance coil is wound is shown in Fig. 5 wherein it will be seen that the periphery of the core is formed with a plurality of extended and spaced apart portions through which are consecutively cut a spiral groove into which the wire of the resistance member 21 is wound, whereby expansion and contraction under temperature variations is admissible without the destruction of the coil.

The backing member 10 is spaced from the tube 19 and as a large amount of heat energy impinges thereupon, the backing becomes quite hot. We have found that if this member is made of white material or other heat reflecting surface it will in time reflect a sufficient amount of heat to be quite uncomfortable to one endeavoring to light his cigar against the heat unit and for that reason we make this plate 10 of black material or paint it black to reduce the heat which would otherwise be reflected therefrom.

This plate 10 is then spaced from the ring 6 by the air space 30 and may be held in the same plane herewith by the screws and washers shown at 31, 32, 33.

We claim:

1. A lighter comprising a standard, a base and a ring supported by arms from the said standard, a backing plate within and spaced from said ring, upstanding supports on said plate, a refractory tube between said

supports spaced in front of said plate, a resistance element within said tube and connections passing through the standard and base and plate adapted to energize said resistance.

2. A lighter comprising a standard, a base and a ring supported by arms from the said standard, a backing plate within and spaced from said ring, upstanding supports on said plate, a refractory tube between said supports spaced in front of said plate, a resistance element within said tube and connections passing through the standard and base and plate adapted to energize said resistance, said element comprising resistance wire wound on a refractory spool having a fluted periphery and of shorter length than said tube.

3. In a cigar lighter a lighting element comprising a refractory tube having positioned therein a refractory spool shorter than said tube and of fluted periphery and a resistance wire wound on said spool, closure means for the ends of the tube and conductors through the said means adapted to energize said resistance.

4. In a cigar lighter a lighting element comprising a refractory tube having positioned therein a refractory spool shorter than said tube and of fluted periphery and a resistance wire wound on said spool, closure means for the ends of the tube and conductors through the said means adapted to energize said resistance, a backing member to which said end closures are extended and attached.

5. In a cigar lighter a lighting element comprising a refractory tube having positioned therein a refractory spool shorter than said tube and of fluted periphery and a resistance wire wound on said spool, closure means for the ends of the tube and conductors through the said means adapted to energize said resistance, a backing member to which said end closures are extended and attached and of heat absorbing surface.

6. In a cigar lighter a heating element comprising a quartz tube having positioned therein a refractory spool shorter than said tube and of fluted periphery and a resistance wire wound on said spool, closure means for the ends of the tube and conductors through the said means adapted to energize said resistance, a backing member to which said end closures are extended and attached and of heat absorbing surface, a base and stand and a ring supported from said stand and fastening means between said ring and said backing member holding same in spaced relation and in the same plane as said ring.

7. A cigar lighter comprising parts as set forth in claim 6 and a protection cage extending from and in front of said ring and surrounding said lighting element.

MILTON H. SHOENBERG.
LESTER SCHON.